## **ABSTRACT**

Disclosed are various ways of performing reliable multicast communication which may include, for example, designating which node or nodes to acknowledge a message and/or whether to immediately acknowledge or delay acknowledgement of a message, which may be of particular use with routers, packet switching systems, computer systems, and other devices. Multiple nodes are typically sent a multicast message, which includes an indication of one or more designated nodes to acknowledge the message, a sequence number or other message identification value, and possibly an indication whether an immediate or delayed acknowledgment is requested. A node receiving the message responds accordingly if it is designated to acknowledge the message, which may include requesting any missing messages, and/or sending an acknowledgment message for the messages it has received since it sent its last acknowledgment message.